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UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No.	99RSS340
First Named Inventor or Application Identifier	Philippe Vivarelli
Title	FAX OVER INTERNET PROTOCOL CLIENT DRIVER
Express Mail Label No.	EL 704727835 US

JC511 U.S. PTO 09/678363 09/29/00

JC813 U.S. PTO 09/29/00

APPLICATION ELEMENTS

See MPEP Chapter 600 concerning utility patent application contents

ADDRESS TO: Assistant Commissioner for Pate... Box Patent Application Washington, DC 20231

1. [✓] *Fee Transmittal Form (e g , PTO/SB/17) (Submit an original, and a duplicate for fee processing)*

2. [✓] Specification [Total Pages 18]
(preferred arrangement set forth below)
- Descriptive title of the Invention
- Cross References to Related Applications
- Statement Regarding Fed sponsored R&D
- Reference to Microfiche Appendix
- Background of the Invention
- Brief Summary of the Invention
- Brief Description of the Drawings *(if filed)*
- Detailed Description
- Claim(s) - **INCLUDED**
- Abstract of the Disclosure - **INCLUDED**

3. [✓] Drawing(s) *(35 USC d113)* [Total Sheets 5]

4. Oath or Declaration [Total Pages 4]
(including Supplemental Declaration)
a. [✓] Executed (original or copy)
b. [ ] Copy from a prior application (37 CFR §1.63(d)) *(for continuation/divisional with Box 17 completed)*

[Note Box 5 below]

I. [ ] DELETION OF INVENTOR(S)
Signed statement attached deleting inventor(s) named in the prior application, see 37 CFR§1 63(d)(2) and 1 33(b)

5. [ ] Incorporation By Reference *(useable if Box 4b is checked)*
The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied under Box 4b, is considered as being part of the disclosure of the accompanying application and is hereby incorporated by reference therein.

6. [ ] Microfiche Computer Program *(Appendix)*

7. Nucleotide and/or Amino Acid Sequence Submission *(if applicable, all necessary)*
a. [ ] Computer Readable Copy
b. [ ] Paper Copy (identical to computer copy)
c. [ ] Statement verifying identical of above copies

ACCOMPANYING APPLICATION PARTS

8. [✓] Assignment Papers (cover sheet & Documents(s))
9. [ ] 37 CFR §3 73(b) Statement *(when there is an assignee)* [✓] Power of Attorney
10. [ ] English Translation Document *(if applicable)*
11. [ ] Information Disclosure Statement (IDS)/PTO-1449 [ ] Copies of IDS Citations
12. [ ] Preliminary Amendment
13. [✓] Return Receipt Postcard (MPEP 503) *(Should be specifically itemized)*
14. [ ] *Small Entity Statement(s) *(PTO/SB/09-12)* [ ] Statement filed in prior application Status still proper and desired
15. [ ] Certified Copy of Priority Document(s) *if foreign priority is claimed)*
16. [✓] Other A check in the amount of $730 00.

*A new statement is required to be entitled to pay small entity fees, except where one has been filed in a prior application and is being relied upon.

17. If a CONTINUING APPLICATION, *check appropriate box and supply the requisite information below and in a preliminary amendment:*

[ ] Conversion [ ] Divisional [ ] Continuation-in-part (CIP) of provisional application No:

Prior application information: ***Anticipated Examiner:***

18. CORRESPONDENCE ADDRESS

[ ] *Customer Number or Bar Code Label* *(Insert Customer No. or Attach bar code label here)* or [X] *Correspondence address below*

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Signature	SX Short	**DATE** 09/29/00	

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FEE TRANSMITTAL

Patent fees are subject to annual revision on October 1.
These are the fees effective October 1, 1997
Small Entity payments must be supported by a small entity statement, otherwise large entity fees must be paid. See Forms PTO/SB/09-12.

TOTAL AMOUNT OF PAYMENT	($) 730 00

Complete If Known	
Application Number	Unassigned
Filing Date	September 29, 2000
First Named Inventor	Philippe Vivarelli
Examiner Name	Unassigned
Group / Art Unit	Unassigned
Attorney Docket No.	99RSS340

METHOD OF PAYMENT

1. ☒ The Commissioner is hereby authorized to charge to the following Deposit Account,

Deposit Account Number: 01-0660

Deposit Account Name: Akin Gump Strauss Hauer & Feld

☒ Charge any additional fee required or credit any overpayment

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2. ☒ **Payment Enclosed:**

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FEE CALCULATION

1. BASIC FILING FEE

Large Fee Code	Large Fee ($)	Small Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
101	760	201	380	Utility filing fee	$690.00
106	310	206	155	Design filing fee	$
107	480	207	240	Plant filing fee	$
108	760	208	380	Reissue filing fee	$
114	150	214	75	Provisional filing fee	$
				SUBTOTAL (1)	($)690.00

2. EXTRA CLAIM FEES

			Extra Claims		Fee from below		Fee Paid
Total Claims	20	-20**=	0	x	18	=	0
Independent Claims	3	-3** =	0	x	78	=	0
Multiple Dependent					0	=	0

***or number previously paid, if greater; For Reissue, see below*

103	18	203	9	Claims in excess of 20
102	78	202	39	Independent Claims in excess of 3
104	260	204	130	Multiple dependent claims in excess of 3
109	78	209	39	**Reissue independent claims over original patent
110	18	210	9	**Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) ($)

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Fee Code	Large Fee ($)	Small Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
105	130	205	65	Surcharge - late filing fee	
127	50	227	25	Surcharge - late provisional filing fee or cover sheet.	
139	130	139	130	Non-English specification	
147	2,520	147	2,520	For filing a request for reexamination	
112	920*	112	920*	Requesting publication of SIR prior to Examiner action	
113	1,840*	113	1,840*	Requesting publication of SIR after Examiner action	
115	110	215	55	Extension for reply within first month	
116	400	216	200	Extension of time within second month	
117	950	217	475	Extension of time within third month	
118	1,510	218	755	Extension of time within fourth month	
128	2,060	228	1,030	Extension of time within fifth month	
119	310	219	155	Notice of Appeal	
120	310	220	155	Filing a brief in support of an appeal	
121	270	221	135	Request for oral hearing	
138	1,510	138	1,510	Petition to institute a pubic use proceeding	
140	110	240	55	Petition to revive - unavoidable	
141	1,320	241	660	Petition to revive - unintentional	
142	1,320	242	660	Utility issue fee (or reissue)	
143	450	243	225	Design issue fee	
144	670	244	335	Plant issue fee	
122	130	122	130	Petitions to the Commissioner	
123	50	123	50	Petitions related to provisional applications	
126	240	126	240	Submission of Information Disclosure Stmt	
581	40	581	40	Recording each patent assignment per properly (time number of properties)	40.00
146	790	246	395	Filing a submission after final rejection (37 CFR 1.129(a))	
149	790	249	395	For each additional invention to be	
				Other fee (specify) _____	
				Other fee (specify) _____	

*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) ($)40.00

SUBMITTED BY Typed or Printed Name	Shayne X. Short, Ph.D.	Date : September 29, 2000	
Signature		Reg. Number	45,105

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

TITLE

FAX OVER INTERNET PROTOCOL CLIENT DRIVER

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CERTIFICATE OF EXPRESS MAILING

I hereby certify that this correspondence, which includes 18 pages of Specification and 5 pages of Drawings, is being deposited with the United States Postal Service "Express Mail Post Office to addressee" Service under 37 C.F.R. Sec. 1.10 addressed to: Box Patent Application, Assistant Commissioner for Patents, Washington, D.C. 20231, on September 29, 2000.

Express Mailing Label No.: **EL 704727835 US**

Teresa A. Newby

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

TITLE: FAX OVER INTERNET PROTOCOL CLIENT DRIVER

SPECIFICATION

BACKGROUND

1. Technical Field

The present invention relates generally to communications via the Internet; and, more particularly, it relates to an embedded facsimile over Internet protocol into a variety of devices.

2. Related Art

In conventional systems that are operable to transmit facsimile (fax) over the Internet, the burden is commonly placed upon the Internet service providers (ISPs) to perform and provide the fax over Internet protocol. Fig. 1 shows a conventional embodiment 100 where ISPs support a fax over Internet protocol session. A fax #1 110 dials into a telephone network provider #1 120. The telephone network provider #1 120 then couples to an ISP #1 130. The ISP #1 130 is operable to perform the fax over Internet protocol 132, most commonly implemented as a T38 protocol 134. The ISP #1 130 communicates to an ISP#2 135 via an Internet protocol network 199. The Internet protocol network 199 is itself the Internet in some embodiments, and it is a private dedicated network operating using an Internet protocol in others. The ISP #2 135, similar to the ISP #1 130, is operable to perform the fax over Internet protocol 137, again most commonly implemented as a T38 protocol 139. The ISP #2 125 then contacts a telephone network provider #2 125 that calls a fax #2 115 to complete the fax transaction. As shown within the Fig. 1, the connection between the fax #1 110 and the fax #2 115, represented by the L1-L3-L4-L5-L6 connections, is a fax over Internet protocol session.

Similarly, a client 150 employing a class 1, class 2, or class 2.0 fax modem and fax software package is also operable to send a fax to the fax #2 115 using the ISP provided fax over Internet protocol. The client 150 is any number of computers including a laptop computer 151 or a personal computer 152. The client 150 dials into the telephone network provider #1 120. The telephone network provider #1 120 then couples to the ISP #1 130. The ISP #1 130 performs the fax over Internet protocol 132. The ISP #1 130 communicates to the ISP#2 135 via the Internet protocol network 199. The ISP #2 125 then contacts the telephone network provider #2 125 that calls the fax #2 115 to complete the fax transaction. As shown within the Fig. 1, the connection between the client 150 and the fax #2 115, represented by the L2-L3-L4-L5-L6 connections, in is also a fax over Internet protocol session.

One deficiency in the conventional fax over Internet protocol, in it being supported by an ISP as shown in the Fig. 1, is that when a user of the client 150 is performing any Internet access session (other than a fax over Internet protocol session), that user must first de-couple from his current Internet access session in order to perform his fax over Internet protocol session.

Further limitations and disadvantages of conventional and traditional systems will become apparent to one of skill in the art through comparison of such systems with the present invention as set forth in the remainder of the present application with reference to the drawings.

SUMMARY OF THE INVENTION

Various aspects of the present invention can be found in a T38 client driver system. The T38 client driver system includes a client having a T38 protocol client driver that is operable to support a fax over Internet protocol session, a first Internet service provider to which the client connects, a second Internet service provider that is operable to support a T38 protocol, and an Internet protocol network. The first Internet service provider and the second Internet service provider are communicatively coupled via the Internet protocol network. The T38 client driver system also includes a telephone network provider and a fax machine that is operable to be connect to the second Internet service provider via the telephone network provider. A fax over Internet protocol session is maintained between the client and the fax machine via the first Internet service provider, the Internet protocol network, the second Internet service provider, and the telephone network provider. The client maintains the fax over Internet protocol session with the fax machine using the T38 protocol client driver.

In certain embodiments of the invention, the client contains a memory, and the T38 protocol driver is contained in the memory. The Internet protocol network is a private network that is operable using an Internet protocol. The client connects to the first Internet service provider using an integrated services digital network. The client connects to the first Internet service provider using an asymmetric digital subscriber line. The client is operable to maintain at least one additional Internet protocol session or multiple Internet protocol sessions including the fax over Internet protocol session. The client is a laptop computer in some embodiments. The client contains a modem having firmware, and firmware contains the T38 protocol client driver.

Other aspects of the present invention can be found in a fax over Internet protocol driver system. The fax over Internet protocol driver system contains a client having a fax over Internet

protocol client driver that is operable to support a fax over Internet protocol session, a first Internet service provider to which the client connects, and an Internet protocol network that connects the first Internet service provider and a second Internet service provider. In addition, the fax over Internet protocol driver system includes a fax machine that is operable to be communicatively coupled to the second Internet service provider, and the client maintains a fax over Internet protocol session with the fax machine using the fax over Internet protocol client driver.

In certain embodiments of the invention, the client maintains an additional Internet protocol session or multiple Internet protocol sessions. The Internet protocol network is itself the Internet in some embodiments. The Internet protocol network is a private network that is operable using an Internet protocol in other embodiments. The client is a personal computer. The fax over Internet protocol uses the T38 protocol. The client connects to the first Internet service provider using a public switched telecommunications network.

Other aspects of the present invention can be found in a method to support a fax over Internet protocol session. The method involves connecting a client to a first Internet service provider over a first connection where the client comprises a fax over Internet protocol client driver that is operable to support a fax over Internet protocol session. The method also involves establishing a second connection between the first Internet service provider and a second Internet service provider via an Internet protocol network where the second Internet service provider establishes a third connection with a fax machine. Finally, the method involves transmitting a fax from the client to the fax machine using a fax over Internet protocol session that is supported by the fax over Internet protocol client driver of the client via the first connection, the second connection, and the third connection.

In certain embodiments of the invention, the first connection is an asymmetric digital subscriber line. The client is any number of devices including another fax machine that is Internet capable. The Internet protocol network is a private network that is operable using an Internet protocol in some embodiments method is also operable to support an additional Internet protocol session along with the fax over Internet protocol session.

Other aspects, advantages and novel features of the present invention will become apparent from the following detailed description of the invention when considered in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

A better understanding of the present invention can be obtained when the following detailed description of various exemplary embodiments are considered in conjunction with the following drawings.

Fig. 2 is a system diagram illustrating an embodiment of a fax over Internet protocol client driver system built in accordance with the present invention.

Fig. 3 is a system diagram illustrating another embodiment of a fax over Internet protocol client driver system built in accordance with the present invention.

Fig. 4 is a system diagram illustrating an embodiment of a T38 client driver, built in accordance with the present invention, that is compatible with a computing system.

Fig. 5 is a system diagram illustrating an embodiment of a fax over Internet protocol client driver, built in accordance with the present invention, that is compatible with a computing system.

DETAILED DESCRIPTION OF THE INVENTION

Fig. 2 is a system diagram illustrating an embodiment of a fax over Internet protocol client driver system 200 built in accordance with the present invention. Within the fax over Internet protocol client driver system 200, a client 250 is operable to connect to an Internet service provider (ISP) #1 230 as shown by a connection to ISP cloud 220. An embedded fax over Internet protocol driver 253 is contained within the client 250. If desired, a T38 protocol 254 is supported by the fax over Internet protocol driver 253. The client 250 is any number of devices including a laptop computer 251 or a personal computer 252. The client 250 uses any number of various ways 221 to perform the connection to the ISP 220 including using a public switched telephone/telecommunications network (PSTN) when using a modem. In addition, the client 250 uses any number of various ways 221 to perform the connection to the ISP 220 including using an integrated services digital network (ISDN), an asymmetric digital subscriber line (ADSL), an asynchronous transfer mode (ATM), or an Ethernet connection when using a network access card, as shown within the number of various ways 221.

After the client connects to the ISP #1 230 via the connection to the ISP 220 cloud, the ISP #1 230 connects to an ISP#2 235 via an Internet protocol network 299. The Internet protocol network 299 is itself the Internet in some embodiments, and it is a private dedicated network operating using an Internet protocol in others. The ISP #2 235 is operable to perform a fax over Internet protocol 237, most commonly implemented as a T38 protocol 239. The ISP #2 225 then contacts a telephone network provider #2 225 that calls a fax #2 215 to complete the fax transaction. As shown within the Fig. 2, the connection between the client 250 and the fax #2 215, represented by the L1-L2-L3-L4 connections, is a fax over Internet protocol session provided between the client 250 and the fax #2 215. Using the embedded fax over Internet

protocol driver 253 within the client 250, a user of the client 250 is provided the capability to maintain a current Internet session and also to initiate a fax over Internet protocol session simultaneously. Given that the fax over Internet protocol is supported by the client 250 itself, the client 250 need not rely on an ISP to support a fax over Internet protocol session.

Fig. 3 is a system diagram illustrating another embodiment of a fax over Internet protocol client driver system 300 built in accordance with the present invention. The fax over Internet protocol client driver system 300 contains a client 350 into which a fax over Internet protocol driver 320 is installed. The client 350 is any number of devices including a laptop computer 351, a personal computer 352, a pen computer 353, an Internet capable fax 354, or any other fax capable device 359. For example, the any other fax capable device 359 is a fax-capable Internet appliance that contains the fax over Internet protocol driver 320 in order to send a fax over the Internet in certain embodiments of the invention.

The fax over Internet protocol driver 320 contains a T38 protocol 322 in certain embodiments of the invention. The T38 protocol 322 is contained in software (S/W) 332 on the client 350. In alternative embodiments, the T38 protocol 322 is contained in firmware in a modem/network access card 331, a printer driver in the client's memory 334, or within read only memory (ROM) of the modem/network access card 335. If desired, an application specific integrated circuit (ASIC) located on a modem card /network access card 333 supports the T38 protocol 322. In addition, any other code storage medium 339 is also operable to store the T38 protocol 322 that is used to support the fax over Internet protocol driver 320.

As described above and also further described below, when using a PSTN to connect to an ISP, a modem is employed. When using any of the other methods to connect to the ISP, a network access card is employed. Either a network access card or a modem is used in the various

embodiments of the invention as required by the particular situation without departing from the scope and spirit of the invention.

Fig. 4 is a system diagram illustrating an embodiment of a T38 client driver 400, built in accordance with the present invention, that is compatible with a computing system. The T38 client driver 400 that is compatible with a computing system contains a computing system 410 that connects to an ISP 430 as shown by a connection to ISP cloud 420. The ISP 430 is operable to connect to an Internet protocol network 499. The Internet protocol network 499 is itself the Internet in some embodiments, and it is a private dedicated network operating using an Internet protocol in others.

The computing system 410 uses any number of various ways 421 to perform the connection to the ISP 420 including using a public switched telephone/telecommunications network (PSTN) when using a modem. In addition, the computing system 410 uses any number of various ways 421 to perform the connection to the ISP 420 including using an integrated services digital network (ISDN), an asymmetric digital subscriber line (ADSL), an asynchronous transfer mode (ATM), or an Ethernet connection when using a network access card, as shown within the number of various ways 421.

The computing system 410 contains a modem/network access card 412 and a memory 414. As described above, when using the PSTN to connect to the ISP, a modem is employed. When using any of the other methods to connect to the ISP, a network access card is employed. The block 412 includes either a network access card or a modem, in whichever embodiment is used in the particular situation. The memory 414 supports a T38 protocol 422 to perform a fax over Internet protocol session. A software (S/W) 432 supports the T38 protocol 422 in some embodiments. A printer driver located in memory 434 supports the T38 protocol 422 in other

embodiments. The memory 414 and the modem 412 are communicatively coupled within the computing system 410. In alternative embodiments, a T38 protocol 421 is operable within the modem 412 itself. The T38 protocol 421 is supported within the modem 412 using a number of different ways including firmware within the modem/network access card 431, an application specific integrated circuit (ASIC) located on a modem card/network access card 433, or a read only memory (ROM) 435 located on the modem/network access card 412.

The Fig. 4 shows an embodiment of the invention where the fax over Internet protocol driver is embedded in the computing system 410. A user of the computing system 410 is able to operate a fax over Internet protocol session and other Internet protocol sessions simultaneously.

Fig. 5 is a system diagram illustrating an embodiment of a fax over Internet protocol client driver 500, built in accordance with the present invention, that is compatible with a computing system. The T38 client driver 500 that is compatible with a computing system contains a computing system 510 that connects to an ISP 530 as shown by a connection to ISP cloud 520. The ISP 530 is operable to connect to an Internet protocol network 599. The Internet protocol network 599 is itself the Internet in some embodiments, and it is a private dedicated network operating using an Internet protocol in others.

The computing system 510 uses any number of various ways 521 to perform the connection to the ISP 520 including using a public switched telephone/telecommunications network (PSTN) when using a modem. In addition, the computing system 510 uses any number of various ways 521 to perform the connection to the ISP 520 including using an integrated services digital network (ISDN), an asymmetric digital subscriber line (ADSL), an asynchronous transfer mode (ATM), or an Ethernet connection when using a network access card, as shown within the number of various ways 521.

The computing system 510 contains a modem/network access card 512. As described above, when using the PSTN to connect to the ISP, a modem is employed. When using any of the other methods to connect to the ISP, a network access card is employed. The block 512 includes either a network access card or a modem, in whichever embodiment is used in the particular situation. In addition, the computing system is operable to perform multiple protocol support 517. The modem 512 supports fax over Internet protocol functionality 590. In some embodiments, the fax over Internet protocol functionality 590 is supported by a T38 protocol functionality 521. The multiple protocol support 517 includes at least voice/fax information 518 and data information 519. In addition, any other information type 590 is able to be supported in accordance with the present invention. The multiple protocol support 517 provides a user of the computing system the opportunity to maintain multiple Internet protocol sessions. The Fig. 5 shows an embodiment of the invention where the fax over Internet protocol driver is embedded in the computing system 510.

In view of the above detailed description of the present invention and associated drawings, other modifications and variations will now become apparent to those skilled in the art. It should also be apparent that such other modifications and variations may be effected without departing from the spirit and scope of the present invention.

CLAIMS

What is claimed is:

1. A T38 client driver system, comprising:

a client having a T38 protocol client driver that is operable to support a fax over Internet protocol session;

a first Internet service provider, the client connects to the first Internet service provider;

a second Internet service provider that is operable to support a T38 protocol;

an Internet protocol network, the first Internet service provider and the second Internet service provider are communicatively coupled via the Internet protocol network;

a telephone network provider;

a fax machine that is operable to be communicatively coupled to the second Internet service provider via the telephone network provider;

a fax over Internet protocol session is maintained between the client and the fax machine via the first Internet service provider, the Internet protocol network, the second Internet service provider, and the telephone network provider;

the client maintains the fax over Internet protocol session with the fax machine using the T38 protocol client driver.

2. The T38 client driver system of claim 1, wherein the client comprises a memory; and

the T38 protocol driver is contained in the memory.

3. The T38 client driver system of claim 1, wherein the Internet protocol network comprises a private network that is operable using an Internet protocol.

4. The T38 client driver system of claim 1, wherein the client connects to the first Internet service provider using an integrated services digital network.

5. The T38 client driver system of claim 1, wherein the client connects to the first Internet service provider using an asymmetric digital subscriber line.

6. The T38 client driver system of claim 1, wherein the client is operable to maintain at least one additional Internet protocol session.

7. The T38 client driver system of claim 1, wherein the client comprises a laptop computer.

8. The T38 client driver system of claim 1, wherein the client comprises a modem having a firmware; and

the T38 protocol client driver is contained within the firmware.

9. A fax over Internet protocol driver system, comprising:

a client having a fax over Internet protocol client driver that is operable to support a fax over Internet protocol session;

a first Internet service provider, the client connects to the first Internet service provider;

a second Internet service provider;

an Internet protocol network, the first Internet service provider and the second Internet service provider are communicatively coupled via the Internet protocol network;

a fax machine that is operable to be communicatively coupled to the second Internet service provider;

the client maintains a fax over Internet protocol session with the fax machine using the fax over Internet protocol client driver.

10. The fax over Internet protocol driver system of claim 9, wherein the client maintains at least one additional Internet protocol session.

11. The fax over Internet protocol driver system of claim 9, wherein the Internet protocol network comprises the Internet.

12. The fax over Internet protocol driver system of claim 9, wherein the Internet protocol network comprises a private network that is operable using an Internet protocol.

13. The fax over Internet protocol driver system of claim 9, wherein the client comprises a personal computer.

14. The fax over Internet protocol driver system of claim 9, wherein the fax over Internet protocol comprises a T38 protocol.

15. The fax over Internet protocol driver system of claim 9, wherein the client connects to the first Internet service provider using a public switched telecommunications network.

16. A method to support a fax over Internet protocol session, the method comprising:

connecting a client to a first Internet service provider over a first connection, the client comprises a fax over Internet protocol client driver that is operable to support a fax over Internet protocol session;

establishing a second connection between the first Internet service provider and a second Internet service provider via an Internet protocol network;

the second Internet service provider establishes a third connection with a fax machine; and

transmitting a fax from the client to the fax machine using a fax over Internet protocol session that is supported by the fax over Internet protocol client driver of the client via the first connection, the second connection, and the third connection.

17. The method of claim 16, wherein the first connection comprises an asymmetric digital subscriber line.

18. The method of claim 16, wherein the client comprises at least one additional fax machine, the at least one additional fax machine comprises an Internet capable fax machine.

19. The method of claim 16, wherein the Internet protocol network comprises a private network that is operable using an Internet protocol.

20. The method of claim 16, further comprising supporting at least one additional Internet protocol session.

Express Mail Label No. EV 339 906 245 US

ABSTRACT

A fax over Internet protocol client driver. The present invention enables a client to support a fax over Internet protocol. Whereas conventional systems commonly rely upon an Internet service provider (ISP) to support the fax over Internet protocol functionality, the invention ensures that a client can perform multiple Internet sessions, one of which is a fax over Internet protocol session. There is no need to disconnect from a current Internet session, and then re-establish another Internet session. The client is any number of devices including a personal computer, a laptop computer, a pen based computer, an Internet capable fax machine, or any other fax capable device. By providing a fax over Internet protocol driver within the client, the client can send a fax transmission over the Internet, even in the situation where the ISP that the client solicits does not support that particular functionality.

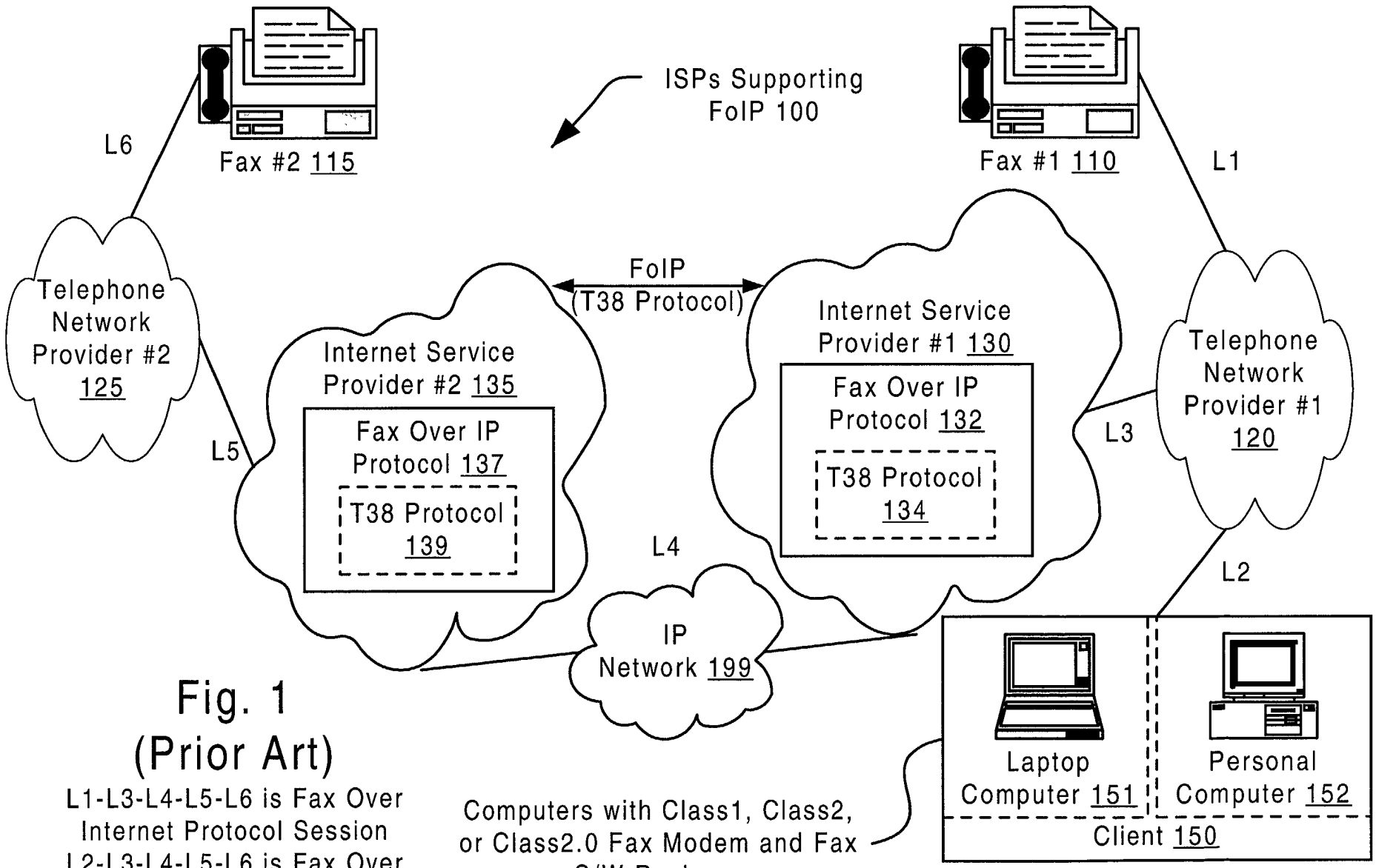

Fig. 1
(Prior Art)

L1-L3-L4-L5-L6 is Fax Over Internet Protocol Session
L2-L3-L4-L5-L6 is Fax Over Internet Protocol Session

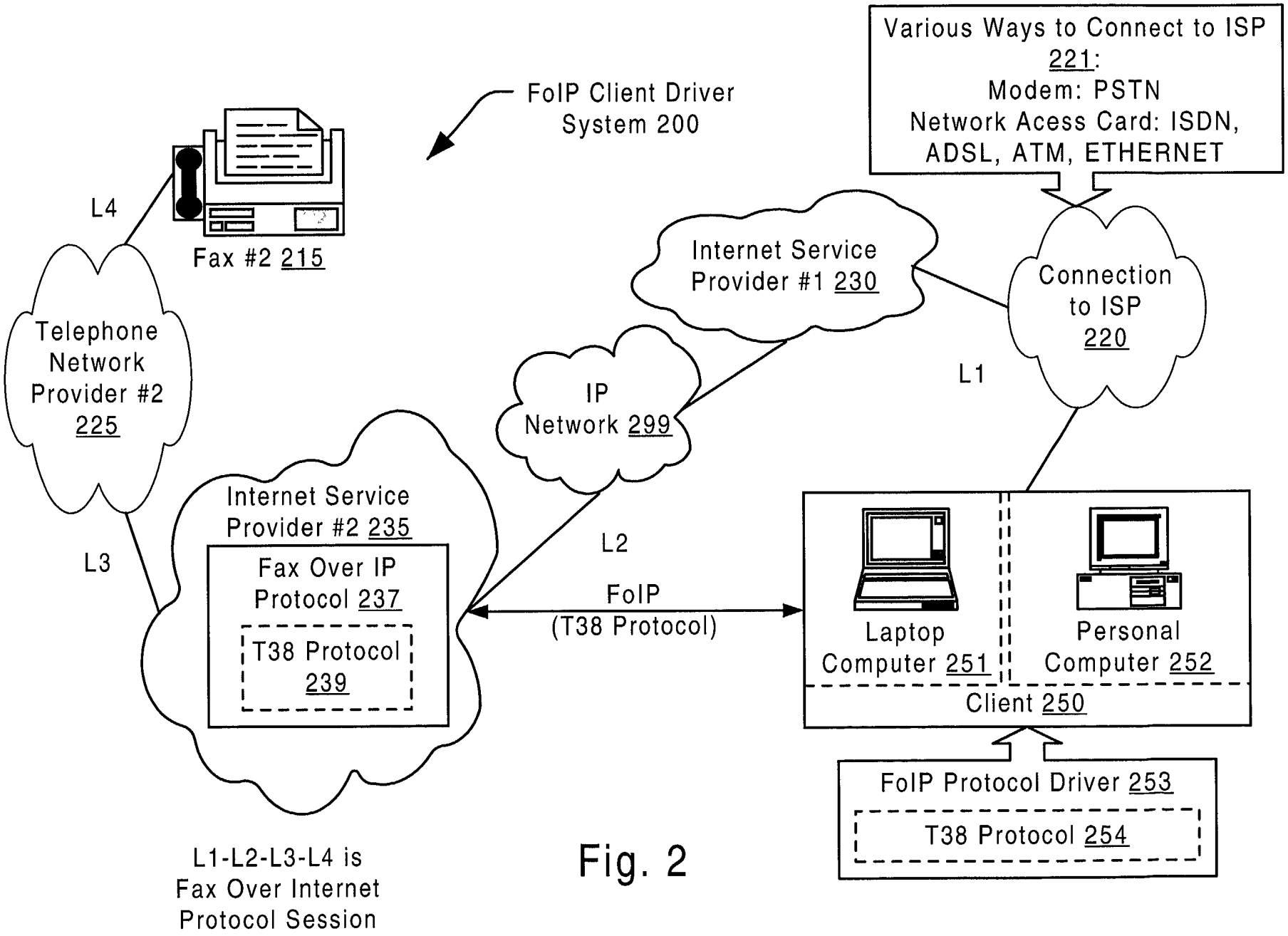
Various Ways to Connect to ISP 221:
Modem: PSTN
Network Acess Card: ISDN, ADSL, ATM, ETHERNET
FoIP Client Driver System 200
L4
Fax #2 215
Telephone Network Provider #2 225
Internet Service Provider #1 230
Connection to ISP 220
L1
IP Network 299
L2
FoIP (T38 Protocol)
L3
Internet Service Provider #2 235
Fax Over IP Protocol 237
T38 Protocol 239
Laptop Computer 251
Personal Computer 252
Client 250
FoIP Protocol Driver 253
T38 Protocol 254
L1-L2-L3-L4 is Fax Over Internet Protocol Session

Fig. 2

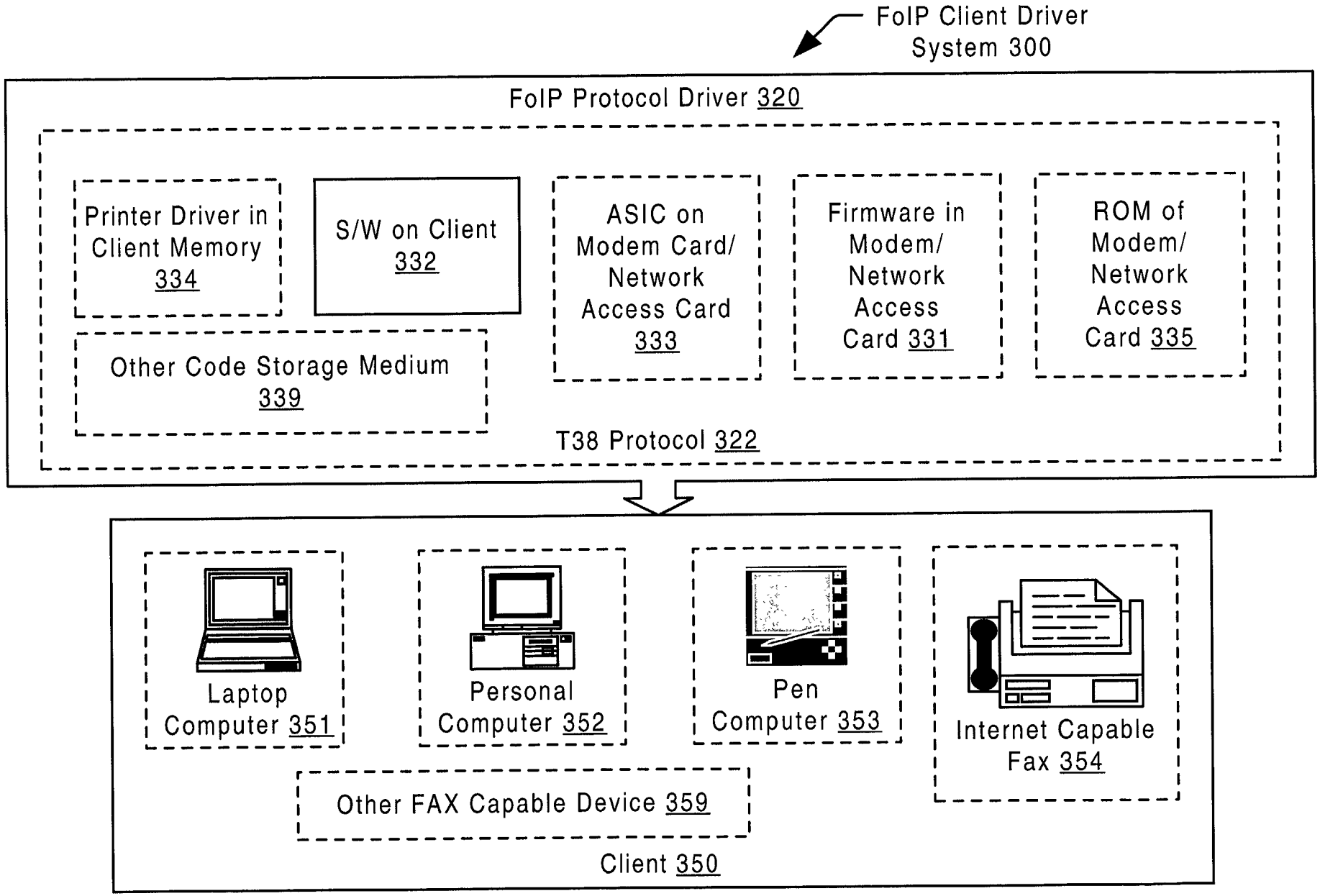
FoIP Client Driver System 300
FoIP Protocol Driver 320
Printer Driver in Client Memory 334
S/W on Client 332
ASIC on Modem Card/ Network Access Card 333
Firmware in Modem/ Network Access Card 331
ROM of Modem/ Network Access Card 335
Other Code Storage Medium 339
T38 Protocol 322
Laptop Computer 351
Personal Computer 352
Pen Computer 353
Internet Capable Fax 354
Other FAX Capable Device 359
Client 350

Fig. 3

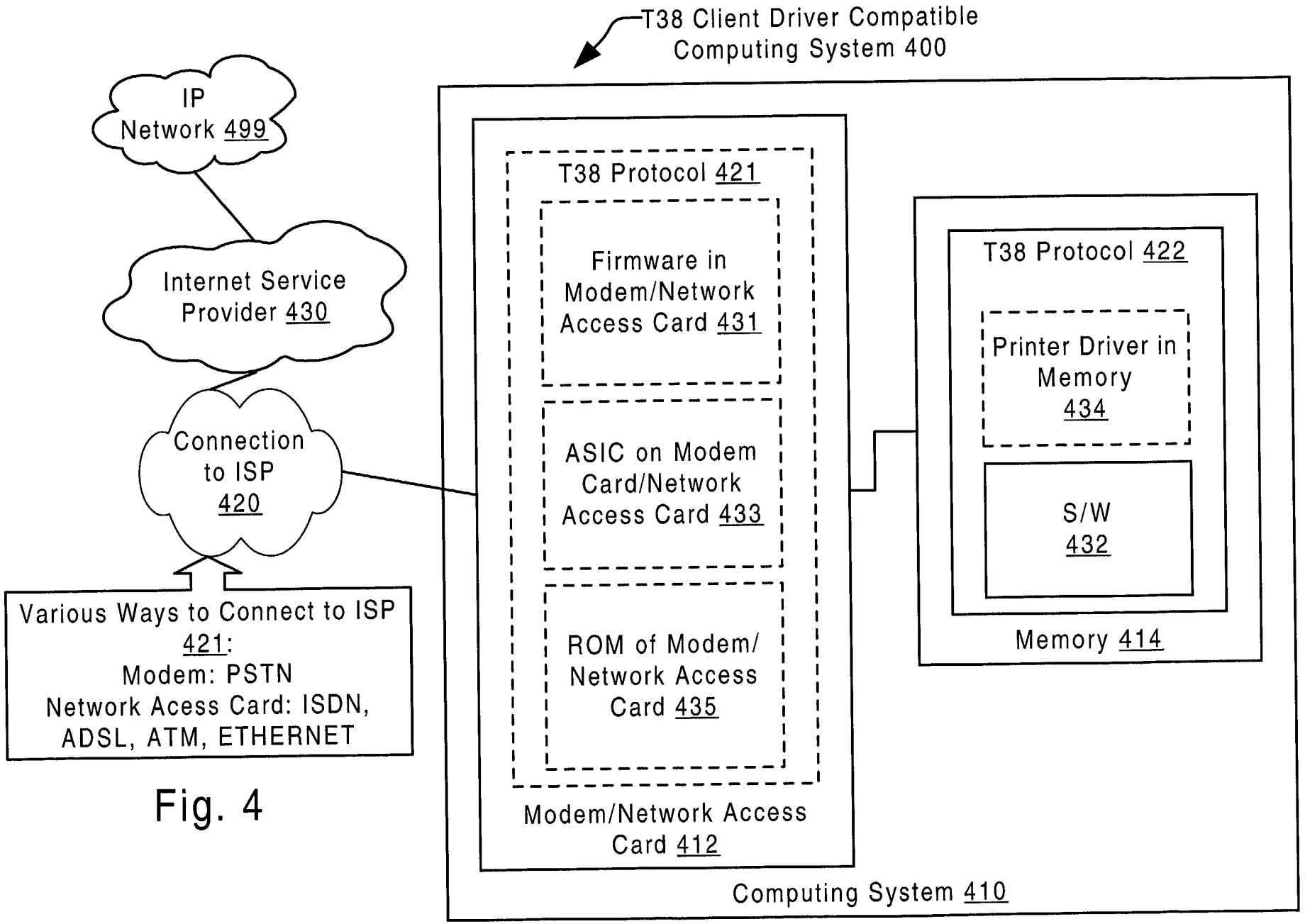
T38 Client Driver Compatible Computing System 400
IP Network 499
Internet Service Provider 430
Connection to ISP 420
Various Ways to Connect to ISP 421:
Modem: PSTN
Network Acess Card: ISDN, ADSL, ATM, ETHERNET
T38 Protocol 421
Firmware in Modem/Network Access Card 431
ASIC on Modem Card/Network Access Card 433
ROM of Modem/ Network Access Card 435
Modem/Network Access Card 412
T38 Protocol 422
Printer Driver in Memory 434
S/W 432
Memory 414
Computing System 410

Fig. 4

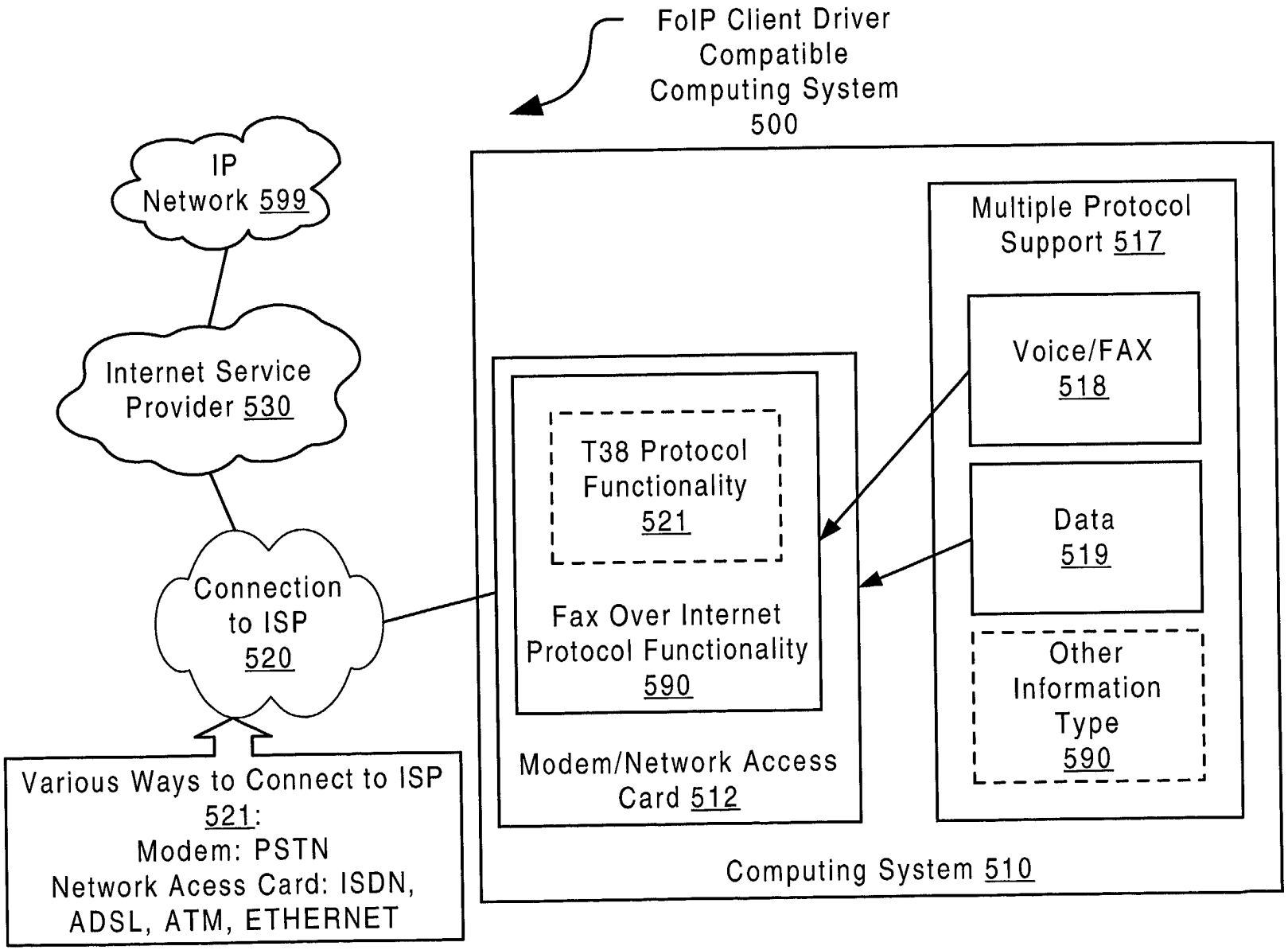
FoIP Client Driver Compatible Computing System 500
IP Network 599
Internet Service Provider 530
Connection to ISP 520
Various Ways to Connect to ISP 521:
Modem: PSTN
Network Acess Card: ISDN, ADSL, ATM, ETHERNET
T38 Protocol Functionality 521
Fax Over Internet Protocol Functionality 590
Modem/Network Access Card 512
Multiple Protocol Support 517
Voice/FAX 518
Data 519
Other Information Type 590
Computing System 510

Fig. 5

Attorney Docket No.: 99RSS340 **PATENT**

DECLARATION FOR PATENT APPLICATION AND POWER OF ATTORNEY

As a below-named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first, and sole inventor (if only one name is listed below) or an original, first, and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled **FAX OVER INTERNET PROTOCOL CLIENT DRIVER**, the specification of which

(check one) [X] is attached hereto.

[ ] was filed on _____ as Application Serial No.: _____

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, §1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, §119(a)-(d) of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

PRIOR FOREIGN APPLICATION(S)			Priority Claimed
			Yes/No
(Number)	(Country)	(Date Filed)	

I hereby claim the benefit under Title 35, United States Code, §119(e) of any United States provisional application(s) listed below:

_____ _____

(Application Serial No.) (Filing Date)

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application or any international application designating the United States under Title 35, United States Code, §365 listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the

first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56, regarding events which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

_____

(Number) (Country) (Date Filed)

_____

(Number) (Country) (Date Filed)

I hereby appoint the following attorneys and/or agents to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith:

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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